motor is receiving its full cycle of power, whereby collectively the motors share in absorbing a continuous power input from the ac source.

7. A switched reluctance motor according to claim 1 having electrical power regeneration capacity, in which the rotor and stator both have salient ferromagnetic poles and further comprising electrical regeneration means for harnessing the mechanical rotor torque produced, which includes a load circuit connected to an output winding inductively coupled to draw power from the rotation of the rotor, the connection between the load circuit and the output winding being commutated by said commutator means in anti-phase with the switching of the supply magnetizing the poles, whereby during one full cycle of the ac supply power is supplied to the motor action and power is drawn from the output winding during the next full cycle of the ac supply.

8. A switched reluctance motor according to claim 7, wherein the motor-driving magnetization of the poles involves the excitation of an input winding mounted on the stator, which winding also serves as the output winding, said commutator means including switch circuits which segregate the actions of drawing power from the ac supply and supplying regenerated power to the load circuit, said commutator means being operative to confine current flow in the output winding to periods exclusive of those of motor-driving magnetization, characterized in that the ac voltage source supplying the motor driving magnetization is commutated in periods that are full cycles of the ac voltage source.

9. A switched reluctance motor according to claim 2, in which a plurality of permanent magnets, forming part of the annular core structure and positioned in parts of the annular core spaced from positions in which the stator and rotor poles are in register, provide a magnetic field bias around the annular core.

10. A switched reluctance motor according to claim 4, in which the inductive reaction filter means connecting the axially extending stator members for restraining passage of ac magnetic flux comprises a solid non-laminated ferromagnetic core members which are also permanent magnets providing a magnetic bias around the closed magnetic circuit of the axially extending stator elements.

11. A switched reluctance motor-generator system powered by an ac voltage source having a frequency which is a constant integer multiple of the synchronous operating speed of the motor, having two reluctance motors mechanically coupled to drive an electric power generator, each reluctance motor comprising a rotor and a stator, both having ferromagnetic poles which come into register cyclically at successive angular positions of the rotor, means for producing an ac magnetic flux component of the motor-driving magnetization of the poles limited in duration to a range of angular position of the rotor in advance of positions in which the poles come into register, and non-commutated magnetizing means for biasing at least a portion of the flux path of the motor-driving magnetization to a state above the knee of the B-H magnetization curve, the system having commutator means for controlling a commutated supply of the ac voltage source to each reluctance motor operative to magnetize the poles of one motor for one full ac cycle which terminates when the poles are in register and to input no further power to that motor during an immediately following full cycle period during which the other motor is receiving its full cycle of power, whereby collectively the motors share in absorbing a continuous power input from the ac source.

12. A switched reluctance motor powered by an ac voltage source having a constant frequency which is a constant integer multiple of the constant synchronous operating speed of the motor, comprising a rotor and a stator, both having ferromagnetic poles which come into register cyclically at successive angular positions of the rotor, means for producing an ac magnetic flux component of the motor-driving magnetization of the poles limited in duration to a range of angular position of the rotor in advance of positions in which the poles come into register, means for harnessing the mechanical rotor torque produced, and commutator means operative with the motor running at its constant synchronous speed for commutating a supply of the ac voltage source to magnetize the poles for one full ac cycle which terminates when the poles are in register and to input no further power during an immediately following full cycle period.

13. A switched reluctance motor according to claim 2, powered by an ac voltage source having twice the frequency characteristic of normal non-commutated synchronous motor operation, comprising means for producing an ac signal having half the frequency of the ac voltage, phase regulating means responsive to the angular position of the motor rotor for ensuring that this ac signal has a phase related to that angular position, means for half-wave rectifying said ac signal to produce gating signals of full cycle duration of the ac voltage source, spaced by similar full cycle periods, said commutator means including switches operated by said gating signals to admit full cycle commutated power to the motor in advance of positions in which the poles come into register and to inhibit such supply of power for a full cycle following the in-register pole position.

14. A switched reluctance motor according to claim 3, in which the ac signal having half the frequency of the ac voltage powering the motor is generated by an auxiliary synchronous alternator coupled to a common rotor shaft and so mechanically driven by the motor, said phase regulating means responsive to the angular position of the motor rotor comprising an adjustment means in the coupling for adjusting the relative angular positions of the motor rotor and alternator rotor.

15. A switched reluctance motor powered by an ac voltage source having a constant frequency which is a constant integer multiple of the constant synchronous operating speed of the motor, comprising a rotor and a stator, both having ferromagnetic poles which come into register cyclically at successive angular positions of the rotor, means for producing an ac magnetic flux component of the motor-driving magnetization of the poles limited in duration to a range of angular position of the rotor in advance of positions in which the poles come into register, means for harnessing the mechanical rotor torque produced, and commutator means operative with the motor running at its constant synchronous speed for commutating a supply of the ac voltage source to magnetize the poles for one full ac cycle which terminates when the poles are in register and to input no further power during an immediately following full cycle period, the amplitude of the ac voltage source being high enough to assure that at least a portion of the flux path of the motor-driving magnetization is magnetized between the knee of the B-H curve and saturation during the periods when the motor produces its drive torque.

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